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- 2 1. A vehicle surroundings monitoring apparatus having a
- 3 stereoscopic image detecting unit for detecting a stereoscopic
- 4 image of solid objects around a self vehicle, an image processor
- 5 for processing said image into a distance image and a plurality
- 6 of micro-processors based on said distance image for recognizing
- 7 said solid objects, comprising:
- 8 a wall surface detecting means for dividing positional
- 9 data of said solid objects into groups and for detecting a wall
- 10 surface formed along a boundary of a road/based on said grouped
- 11 positional data of said solid objects;
- a wall surface model forming means for interconnecting
- a plurality of nodes and for forming/a wall surface model based
- on said interconnected nodes to express an outline of said wall
- 15 surface; and
- a wall surface model correcting means for correcting
- 17 said wall surface model based on said grouped positional data
- 18 of said solid objects.
- 19
- 20 2. The apparatus according to claim 1, wherein
- said wall surface model correcting means comprises a
- means for applying a pattern matching to said grouped positional
- 23 data to search a position of said wall surface corresponding to
- 24 said respective nodes and a means for correcting coordinates of
- 25 said nodes based on said position of said wall surface.
- 26
- 27 3. The apparatus according to claim 2, wherein
- said pattern matching uses a wall surface pattern

- 1 having such eight coefficient as becomil large in the outside
- 2 direction thereof.

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- 4 4. The apparatus according to claim 2, wherein
- 5 said wall surface model correcting means comprises a
- 6 means for correcting said coordinates of said corresponding nodes
- 7 in the direction where said positional data of said solid objects
- 8 partially exist, when said pattern matching detects no wall
- 9 surface.

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- 11 5. The apparatus according to claim 1, wherein
- said wall surface model correcting means comprises a
- means for correcting said coordinates of said respective nodes
- 14 in the direction of pringing them close to a straight line
- 15 connecting one adjacent node and the other adjacent node after
- 16 said wall surface model is corrected based on said grouped
- 17 positional data of said solid objects.

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